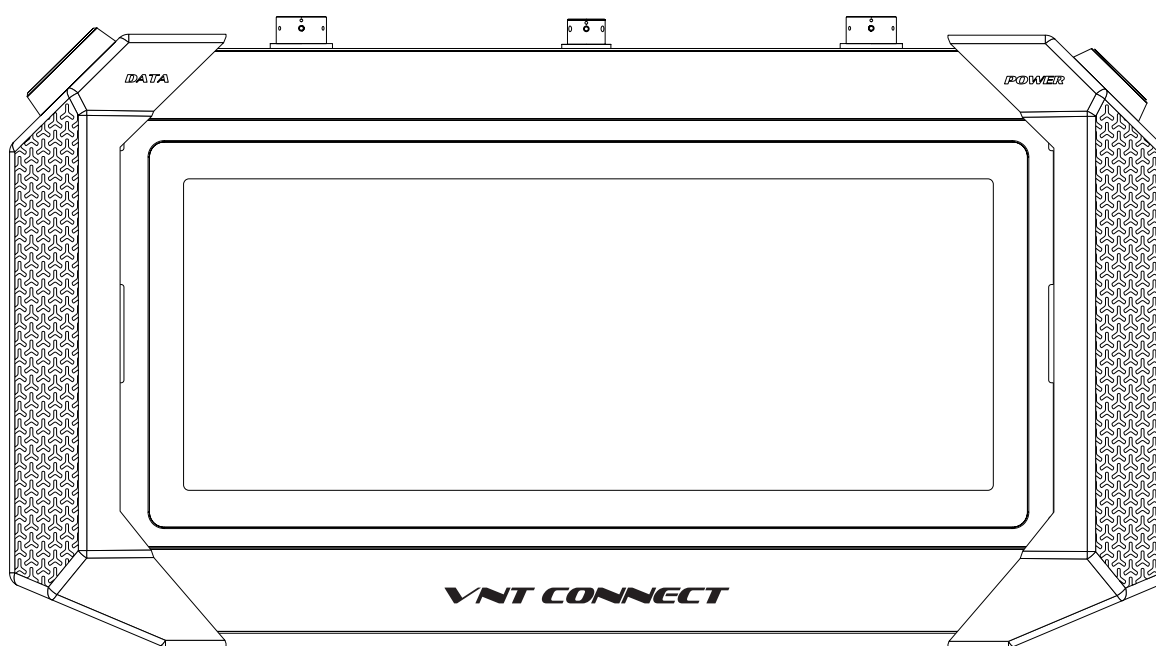
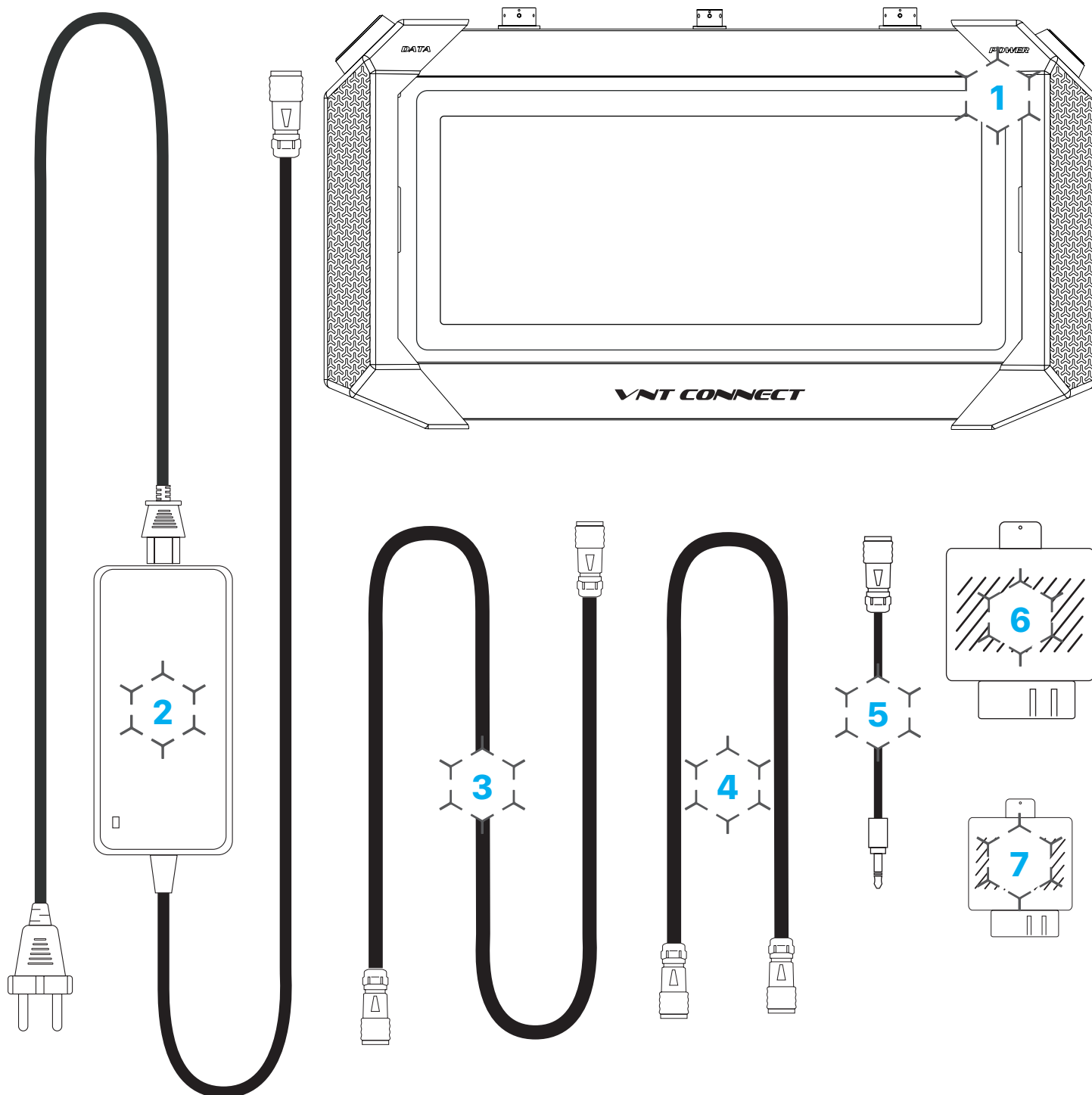


VNT CONNECT®

TURBO ACTUATOR TESTER
ELECTRONIC AND ELECTROPNEUMATIC 12 V AND 24 V

USER MANUAL





	Description	Quantity
1	VNT Connect - Tester and Programmer	1
2	Power supply	1
3	Actuator control cable 1.5 m	1
4	Actuator control cable 1 m	1
5	Cable Connection A1	1
6	Connector	30
7	Denso Power Connector	2

Technical Specifications

MODEL NAME	VNT Connect	COMPATIBLE TECHNOLOGIES	
GENERAL		PWM	12 V
Dimensions W x D x H	418 x 230 x 60 mm	CAN BUS	12 V - 24 V
Weight	2,8 Kg	LIN	12 V
Display	12" Widescreen	ELECTRONICS	
CONNECTIONS		Rated Voltage	24 V DC
DC power supply	1	Rated Current	5 A
OUT/IN port	2	Phase	1 Phase + N + PE 50 / 60 Hz
Ethernet RJ45	1	Maximum Power	120 W

Supported Actuators

HELLA	6NW012.619-24	ELECTROPNEUMATIC	54399700136
MAHLE	49180-18490	ELECTROPNEUMATIC	53039700205
BORGWARNER	59001107638	ELECTROPNEUMATIC	805713-1
BOSCH	59001107382	ELECTROPNEUMATIC	16309700005
BOSCH-MAHLE	59001107267 R	ELECTROPNEUMATIC	18509700024
BOSCH-MAHLE	59001107381	ELECTROPNEUMATIC	756047-5
BOSCH-MAHLE	59001107267	ELECTROPNEUMATIC	49335-01700
CONTINENTAL	49477-19400	ELECTROPNEUMATIC	784521-2
CONTINENTAL	49477-19620	ELECTROPNEUMATIC	54309700000
CONTINENTAL	B100102-1	ELECTROPNEUMATIC	806850-5
CONTINENTAL	K6T51076	ELECTROPNEUMATIC	786137-3
CONTINENTAL	833081-0011	ELECTROPNEUMATIC	804963-2
COOPERSTANDARD	COOPERSTANDARD	ELECTROPNEUMATIC	789773-28
DELPHI	176920	ELECTROPNEUMATIC	54359700027
DENSO	17201 - 301xx	ELECTROPNEUMATIC	803956-1
DENSO	VB22	ELECTROPNEUMATIC	796399-7
DENSO	VB23	ELECTROPNEUMATIC	806498-1
DENSO	89674-52010	ELECTROPNEUMATIC	807489-1
ELECTROPNEUMATIC	813860-3	HELLA	6NW011.132-56
ELECTROPNEUMATIC	805156-6	HELLA	6NW008412 - G54
ELECTROPNEUMATIC	775517-2	HELLA	6NW008412 - G206

HELLA 6NW008412 - G185	HELLA 6NW010430-41 (59001107275)	HINO 59001107732
HELLA 6NW009420 - G285	HELLA 6NW010099-02	HOLSET 5554033
HELLA 6NW008412 - G203	HELLA 6NW010099-05	KAMTEC 59001107695
HELLA 6NW008412 - G138	HELLA 6NW010099-18	KAMTEC 784111-0015
HELLA 6NW008412 - G276	HELLA 6NW012.619-20	KAMTEC 842232-0039
HELLA 6NW009228 - G66	HELLA 6NW010430-00	MAHLE 03F145725K
HELLA 6NW009228 - G145	HELLA 6NW010430-02	MAHLE 49180-18490-M
HELLA 6NW009543 - G26	HELLA 6NW010430-04	MAHLE 05L253019L
HELLA 6NW010099 - 10	HELLA 6NW010430-18	MAHLE 59001107722
HELLA 6NW009660 - G004	HELLA 6NW010430-38	MAHLE 839823-0002
HELLA 6NW009660 - G009	HELLA 6NW010430-12	MAHLE 49180-18440
HELLA 6NW009228 - G79	HELLA 6NW010430-32	MAHLE 04E145725S
HELLA 6NW009543 - G31	HELLA 6NW010430-14	MAHLE 04E145721L
HELLA 6NW009543 - G48	HELLA 6NW009550 - G-82	MAHLE 9V204 - 03F145701G
HELLA 6NW009228 - G64	HELLA 6NW009550 - G-20	MAHLE 46352758
HELLA 6NW009543 - G45	HELLA 6NW009550 - G-21	MANDO 59002107036
HELLA 6NW009228 - G93	HELLA 6NW010430-01	MANDO 59001107416
HELLA 6NW008412 - G222	HELLA 6NW010430-37	MANDO 59001107683
HELLA 6NW009543 - G27	HELLA 6NW010430-26	MANDO 28235-2F520
HELLA 6NW009228 - G65	HELLA 6NW010430-52	MANDO 28235-4A600
HELLA 6NW009660 - G13	HELLA 6NW010430-25	MANDO 59001107806
HELLA 6NW010430-27	HELLA 6NW009483 - G-33-2	MANDO 28235-2A600
HELLA 6NW009550 - G-74	HELLA 6NW010430-05 (59001107246)	MARELLI 16399700016
HELLA 6NW009550 - G-59	HELLA 6NW009206 - G-36	MARELLI 9VA10
HELLA 6NW009550 - G-77	HELLA 6NW010430-11 (797863-0081)	MARELLI 9VA04
HELLA 6NW009550 - G-25	HELLA 6NW010430-03 (59001107141)	MARELLI 835556-0002
HELLA 6NW009550 - G-72	HELLA 6NW009206 - G-35	MARELLI 835556-0070
HELLA 6NW010430-30	HELLA 6NW010430-43 (59001107272)	MARELLI 835556-0247
HELLA 6NW009483 - G-50	HELLA 6NW009550 G-98	MARELLI 845780-0071
HELLA 6NW009483 - G-31	HELLA 6NW009550 - G-21-1	MARELLI 845780-0074
HELLA 6NW009206 - G-34	HELLA 6NW010430-63 (59001107215)	MITSUBISHI 49135-056xx
HELLA 6NW009206 - G-33	HELLA 6NW009550 - G-17	MITSUBISHI 49135-058xx
HELLA 6NW009206 - G-32-A	HELLA 6NW010430-19	MITSUBISHI 792942-0032
HELLA 6NW009483 - G-36-A	HELLA 6NW011.132-23	SEOHAN 59001107813
HELLA 6NW010430-09 - (797836-0069)	HELLA 6NW011.132-90	SIEMENS SIEMENS - VW AUDI
HELLA 6NW010430-30 (797863-0085)	HELLA 53049700069	SIEMENS A2C30724900
HELLA 6NW009483 - G-59	HINO 726997-13	SIEMENS A6409060000
		SIEMENS A6511530394

SIEMENSA2C53166097

SIEMENSA6519060300

SIEMENSA6519060200

SIEMENS59001107126

Turbo Supported

BMTS	40008802	GARRETT	763091-1	GARRETT	798015-2
BMTS	04E145704N	GARRETT	771954-1	GARRETT	771953-1
BMTS	04E145721L	GARRETT	742730-13	GARRETT	826830-1
BMTS	40006159	GARRETT	777853-13	GARRETT	777318-2
BMTS	8514266	GARRETT	771955-1	GARRETT	731877-9
BMTS	40007575	GARRETT	762965-17	GARRETT	757779-5
CONTINENTAL	B100102-0001	GARRETT	796911-2	GARRETT	755300-7
CONTINENTAL	7633795	GARRETT	758353-24	GARRETT	786880-21
CONTINENTAL	1165945221305	GARRETT	803423-2	GARRETT	769674-6
CONTINENTAL	2800013004280	GARRETT	733701-9	GARRETT	831157-2
GARRETT	839827-1	GARRETT	767378-14	GARRETT	753544-20
GARRETT	856652-1	GARRETT	727461-7	GARRETT	787556-1
GARRETT	854870-8	GARRETT	887552-1	GARRETT	778400-5
GARRETT	828760-8	GARRETT	742110-7	GARRETT	767933-8
GARRETT	823665-7	GARRETT	741785-14	GARRETT	854800-1
GARRETT	784114-2	GARRETT	750773-15	GARRETT	752610-32
GARRETT	796017-8	GARRETT	808031-1	GARRETT	812971-2
GARRETT	796910-2	GARRETT	781743-1	GARRETT	753546-23
GARRETT	794877-1	GARRETT	758352-26	GARRETT	753519-9
GARRETT	752990-7	GARRETT	771903-1	GARRETT	824754-3
GARRETT	759688-5	GARRETT	750080-1	GARRETT	798128-2
GARRETT	823024-4	GARRETT	804968-3	GARRETT	788479-6
GARRETT	727463-6	GARRETT	780502-1	GARRETT	763647-19
GARRETT	763148-1	GARRETT	765985-10	GARRETT	797517-3
GARRETT	758351-24	GARRETT	764809-1	GARRETT	49335-02055
GARRETT	802774-8	GARRETT	742693-2	GARRETT	833714-1 S2
GARRETT	762060-8	GARRETT	762463-6	GARRETT	833715-1 S2
GARRETT	750952-13	GARRETT	726423-13	GARRETT	824168-1
GARRETT	787630-1	GARRETT	742810-1	GARRETT	845369-4

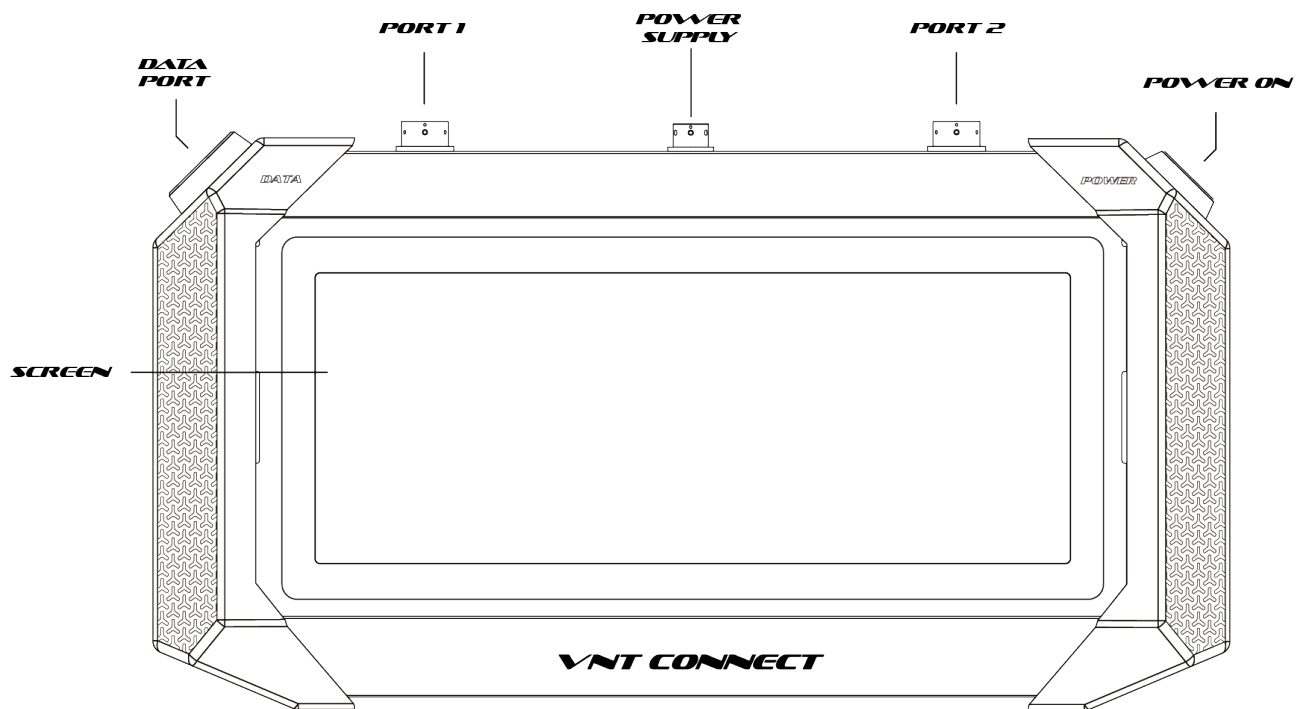
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GARRETT	843814-8	GARRETT	833714-2	IHI	06K145722H
GARRETT	858866-9	GARRETT	850229-1	IHI	9VA10
GARRETT	887157-1	GARRETT	765314-1	IHI	06K145874N
GARRETT	858864-9	GARRETT	842093-1	IHI	03F145701K
GARRETT	870248-2	GARRETT	767805-2	IHI	9VA04
GARRETT	12639700095	GARRETT	850840-1	IHI	9VA08
GARRETT	769701-3	GARRETT	853741-1	IHI	9V202
GARRETT	819976-25	GARRETT	805716-7	IHI	9VA09
GARRETT	822751-2	GARRETT	857278-3	IHI	05L253019F
GARRETT	838417-1	GARRETT	886240-3	IHI	04E145704T
GARRETT	845210-1	GARRETT	898723-1	IHI	06K145722N
GARRETT	769909-1	GARRETT	898906-6	IHI	05L253019L
GARRETT	804985-1	GARRETT	790367-1	IHI	9VA05
GARRETT	832642-5	GARRETT	805156-6	IHI	04E145704P
GARRETT	821784-1	GARRETT	847671-4	IHI	9V205
GARRETT	838452-3	GARRETT	813860-3	IHI	872869-1
GARRETT	856473-1	GARRETT	775517-5	IHI	8513122.02 - RHV4
GARRETT	776470-3	GARRETT	753556-1	IHI	VV20
GARRETT	810822-1	GARRETT	756047-5	IHI	8518204
GARRETT	806094-10	GARRETT	766924-1	IHI	7812321.05 - RHV4
GARRETT	769705-1	GARRETT	806850-5	IHI	9V102
GARRETT	752343-6	GARRETT	787274-1	IHI	VV19
GARRETT	833714-1 S2	GARRETT	784521-2	IHI	9V101
GARRETT	799671-2	GARRETT	788290-1	IHI	VV21
GARRETT	797518-4	GARRETT	803958-2	IHI	AL0058 - A6510900886
GARRETT	776469-6	GARRETT	804963-2	IHI	A6510900786
GARRETT	833715-1 S2	GARRETT	840513-1	IHI	AL0059 - A6510900586
GARRETT	819968-1	GARRETT	789773-28	IHI	VV22
GARRETT	821785-2	GARRETT	796399-1	IHI	9VB01
GARRETT	853603-2	GARRETT	803956-3	IHI	VB31
GARRETT	777162-1	GARRETT	796122-7	IHI	8512379.07 - RHV4
GARRETT	752341-6	GARRETT	786137-3	IHI	3465487.04
GARRETT	819977-20	GARRETT	803957-1	IHI	9B021
GARRETT	850841-7	GARRETT	783583-1	IHI	8512379.03
				IHI	8512379.02

IHI	8573107.03	KKK	54409700009 S2	KKK	805713-5
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IHI	9L002	KKK	53269700014	KKK	17459700022
IHI	46349345	KKK	54409700026	KKK	17459700017
IHI	46351871	KKK	16359700028	KKK	16389700020
IHI	46352758	KKK	54359700045	KKK	17459700020
KKK	16399700010	KKK	54389700008	KKK	17459700039
KKK	16399700016	KKK	54409700038	KKK	16319700018
KKK	16339700027	KKK	54409700044	KKK	16319700058
KKK	16339700024	KKK	54389700024	KKK	16319700063
KKK	18509700024 S2	KKK	54359700041	KKK	16319700064
KKK	16359700067 S2	KKK	54359700043	KKK	53039700830
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KKK	53039700653	KKK	54359700047	KKK	54399700098
KKK	53049700070	KKK	53039700457	KKK	53039700139
KKK	53039700358	KKK	53039700775	KKK	16359700067 S2
KKK	54399700107	KKK	53039700754	KKK	16309700002
KKK	53039700278	KKK	54359700053	KKK	54399700136
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KKK	53039700357	KKK	54409700046	KKK	16309700003
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		KKK	54409700042		

mitsubishi	49180-01275	mitsubishi	49335-00583
mitsubishi	49180-01370	mitsubishi	49180-04310
mitsubishi	49135-05640	mitsubishi	49131-07420
mitsubishi	49335-00240	mitsubishi	49131-07400
mitsubishi	49135-05650	mitsubishi	49335-00610
mitsubishi	49135-05895	mitsubishi	49335-00640
mitsubishi	49135-05660	mitsubishi	49335-00630
mitsubishi	49135-05730	mitsubishi	49335-00635
mitsubishi	49135-05761	mitsubishi	54409700033
mitsubishi	49135-05720	mitsubishi	49335-00642
mitsubishi	49135-05671	mitsubishi	54409700031
mitsubishi	49135-05620	mitsubishi	54409700041
mitsubishi	49135-05610	mitsubishi	49335-00644
mitsubishi	49135-05885	mitsubishi	54409700024
mitsubishi	49135-05630	mitsubishi	49335-00620
mitsubishi	49135-05860	mitsubishi	49477-06200
mitsubishi	49135-05670	mitsubishi	49335-01700
mitsubishi	49335-00220	mitsubishi	49335-01410
mitsubishi	49335-01970	mitsubishi	49335-02100
mitsubishi	49335-01950	mitsubishi	49335-01702
mitsubishi	49335-01930	toyota	17201-30160
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mitsubishi	49335-00584		
mitsubishi	49335-00585		
mitsubishi	49335-00530		
mitsubishi	49335-00550		
mitsubishi	49335-00570		
mitsubishi	49335-00510		

External Overview

The correct test configuration of the device is shown in the figure.



Data Port: Used to connect VNT Connect to the internet network and/or ARMEC TURBO benches Use an RJ-45 type cable for connection;

Port 1: Used to check the operation of the actuator. Use one of the Actuator Control cables 3 and 4 for connection;

Power Input: Used to connect the VNT Connect to the power supply. Use supplied power supply for connection 2;

Port 2: Used to check the operation of the actuator. Use one of the Actuator Control cables 3 and 4 for connection;

Power Button: Used to turn on VNT Connect. Proper startup will be confirmed by backlighting of the button;

Screen: Used for visualization and interaction with the VNT Connect software.

Head Connectors

HC1		40008802 04E145704N 04E145721L 40006159 8514266 40007575 B100102-0001 7633795 1165945221305 2800013004280 839827-1 856652-1 854870-8 828760-8 823665-7 784114-2 796017-8 796910-2 794877-1 752990-7 759688-5 823024-4 727463-6 763148-1 758351-24 802774-8 762060-8 750952-13 787630-1 763091-1 771954-1
HC2		742730-13 777853-13 771955-1 762965-17 796911-2 758353-24 803423-2 733701-9 767378-14 727461-7 887552-1 742110-7 741785-14 750773-15 808031-1 781743-1 758352-26 771903-1 750080-1 804968-3 780502-1
HC3		765985-10 764809-1 742693-2 762463-6 726423-13 742810-1 798015-2 771953-1 826830-1 777318-2 731877-9 757779-5 755300-7 786880-21 769674-6 831157-2 753544-20 787556-1 778400-5 767933-8 854800-1 752610-32 812971-2 753546-23 753519-9 824754-3 798128-2 788479-6 763647-19 797517-3 49335-02055 833714-1S2 833715-1S2 824168-1 845369-4 780708-1 803110-8 841805-11 843814-8 858866-9 887157-1 858864-9 870248-2 12639700095 769701-3 819976-25 822751-2 838417-1 845210-1 769909-1 804985-1 832642-5 821784-1 838452-3 856473-1 776470-3 810822-1 806094-10 769705-1 752343-6 833714-1S2 799671-2 797518-4 776469-6
HC4		833715-1S2 819968-1 821785-2 853603-2 777162-1 752341-6 819977-20 850841-7 777159-1 924318-1 852072-7 833714-2 850229-1 765314-1 842093-1 767805-2 850840-1 853741-1 805716-7 857278-3 886240-3 898723-1 898906-6 790367-1
HC5		805156-6 847671-4 813860-3 775517-5 753556-1 756047-5 766924-1 806850-5 787274-1 784521-2 788290-1 803958-2 804963-2 840513-1 789773-28 796399-1 803956-3 796122-7 786137-3
HC6		803957-1 783583-1 806498-3 806500-1
HC7		807489-1 06K145722H 9VA10 06K145874N 03F145701K 9VA04 9VA08

H08		9V202 9VA09 05L253019F 04E145704T 06K145722N
H09		831120-1
H10		874490-1
H11		05L253019L 9VA05 04E145704P 9V205 872869-1 8513122.02 - RHV4 VV20 8518204 7812321.05 - RHV4 9V102 VV19 9V101 VV21 AL0058 - A6510900886 A6510900786 AL0059 - A6510900586
H12		VV22
H13		9VB01 VB31 8512379.07 - RHV4
H14		3465487.04
H15		9B021

H16		8512379.03 8512379.02
H17		8573107.03 8512379.04 8512379.05 46353289
H18		9L001
H19		9L002 46349345 46351871 46352758 16399700010 16399700016 16339700027 16339700024 18509700024 S2 16359700067 S2 53049700043 53039700491 53049700050 53039700430 53049700051 54409700030 54409700015 53049700055 54409700014 54399700096 53039700653 53049700070 53039700358 54399700107 53039700278 53039700432 53039700357 10009700130 773098-2 53039700171 54409700001 54409700006 54409700009 S2 54409700009 53269700005 S2 16359700014 54409700013 53269700014 54409700026 16359700028 54359700045 54389700008 54409700038 54409700044 54389700024 54359700041 54359700043 54389700026 53169700069 54409700039 54359700039 54359700060 53169700073 54359700056 53039700657 53169700031 53039700698 54359700047 53039700457 53039700775 53039700754 54359700053 53169980077 54409700046 53039700699 825965-2 54359700057 54409700043 53169700063 54409700042 805713-5 178737 16409700001 17459700040 18589700012 17459700022 17459700017 16389700020 17459700020 17459700039 16319700018 16319700058 16319700063 16319700064 53039700830 16309700005 825965-2 805713-5 BV39F-0136 53039700152 BV39F-0114
H20		53039700206
H21		54399700114

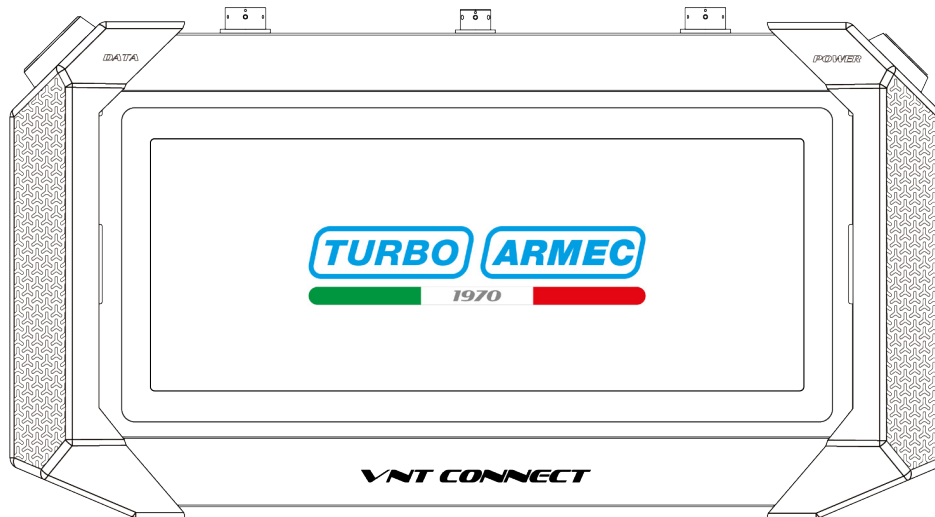
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H24		49135-05650 49135-05895 49135-05660 49135-05730
H25		3793726
H26		3793697
H27		9B007
H28		16319700008
H29		17459700020

H30		49135-05761 49135-05720 49135-05671 49135-05620 49135-05610 49135-05885 49135-05630 49135-05860 49135-05670 49335-00220 49335-01970 49335-01950 49335-01930 49335-01940 49335-01960 49477-01202 49477-01214 49477-01002 49477-01012 49477-01013 49477-01204 49477-01203 49335-00520
H31		VIET
H32		49335-00584 49335-00585 49335-00530 49335-00550 49335-00570 49335-00510 49335-00583
H33		49180-04310 49131-07420 49131-07400 49335-00610 49335-00640 49335-00630 49335-00635 54409700033 49335-00642 54409700031 54409700041 49335-00644 54409700024 49335-00620 49477-06200 49335-01700 49335-01410 49335-02100
H34		49335-01702 17201-30160
H35		54399700069
H36		17201-0L070 17201-30110

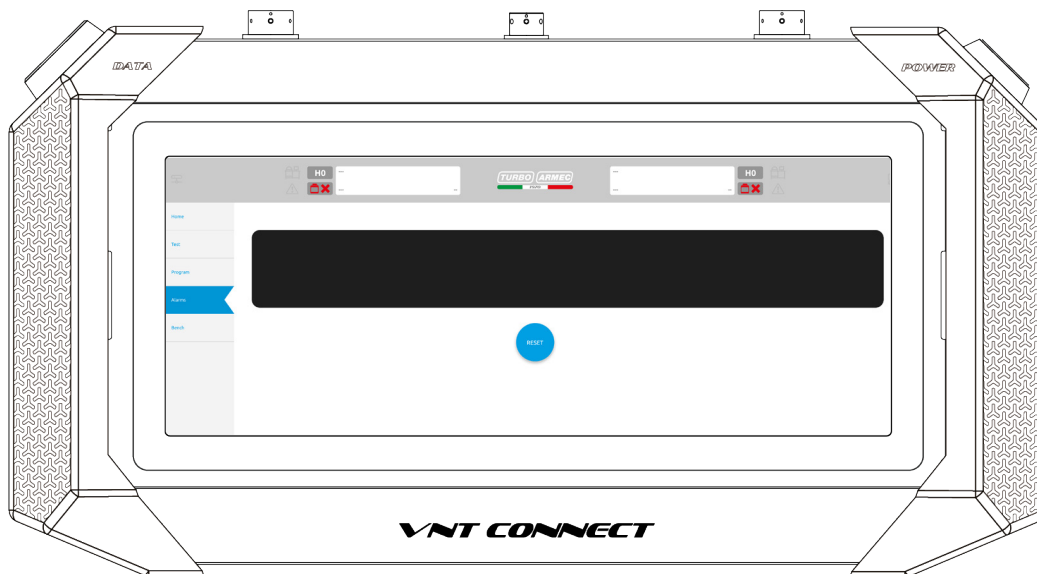
Operation of the Tester

The tester operates using the panel shown in the following figure.

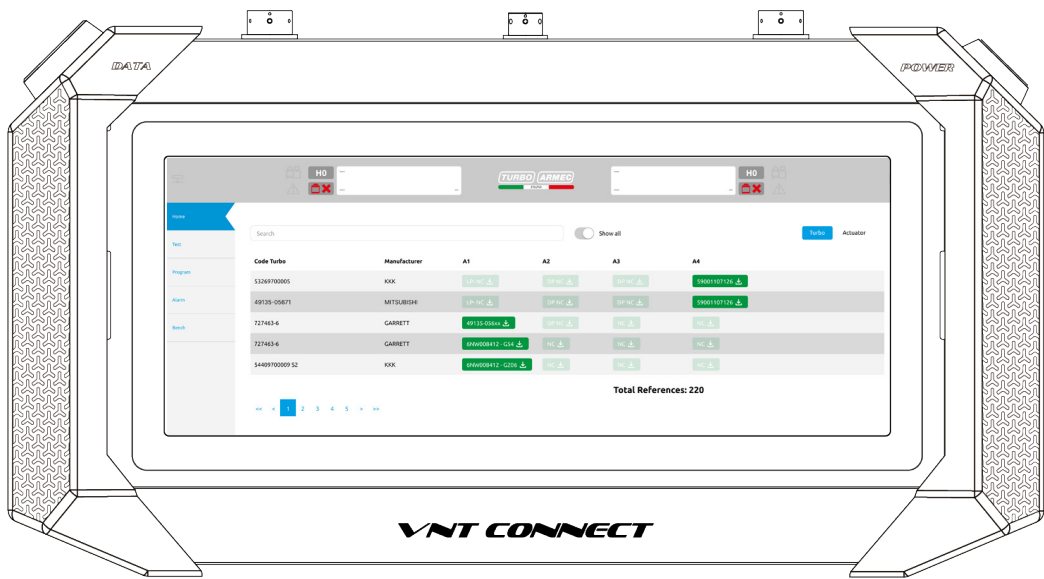
After connecting the VNT Connect with its power supply and turning it on, the screen shown below will be displayed:



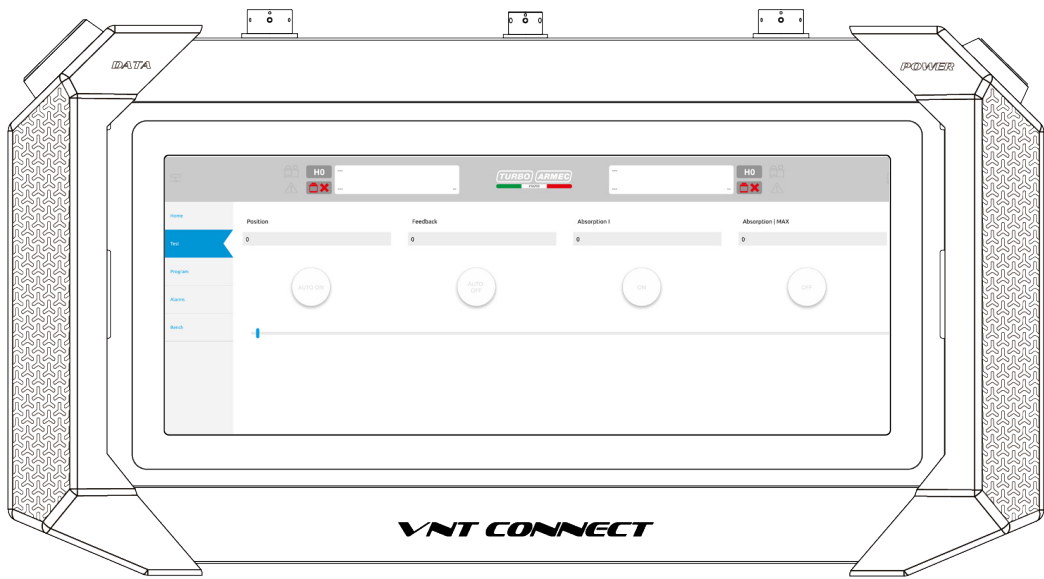
Next, in order to use VNT Connect it will be necessary to reset the alarms using the reset button on the screen. The same procedure may be required in case there is an event that generates an alarm during the testing and/or programming phases.



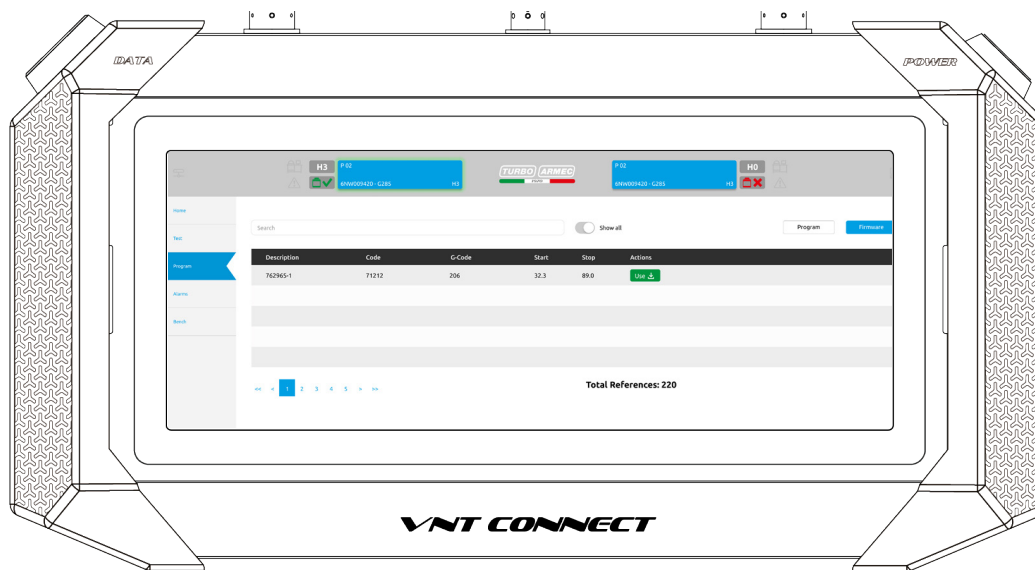
Next, you will be directed to Home, where you can search for the actuator or turbo code you wish to test. Once you have identified the desired code, you can select it and use it for testing.



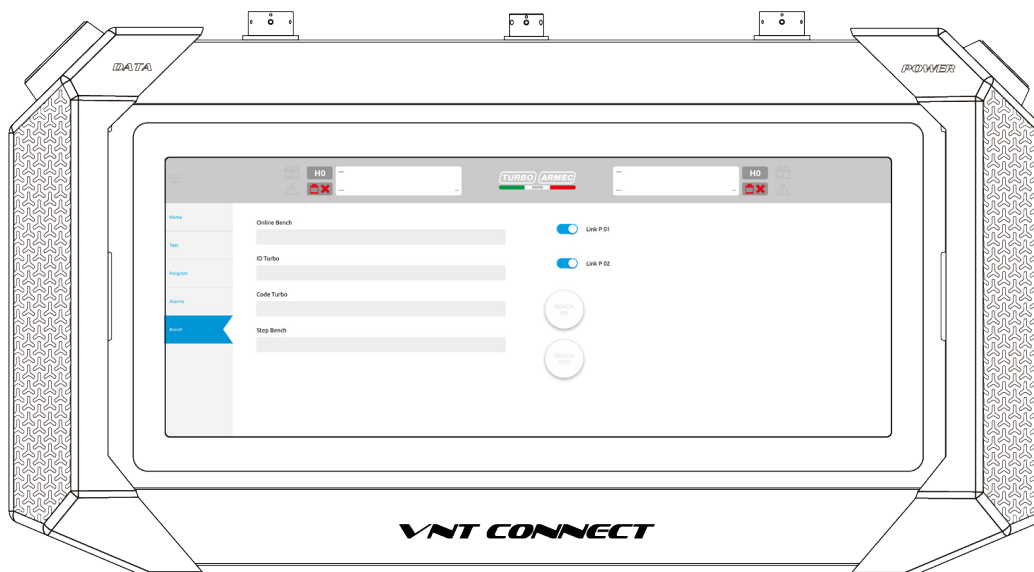
By accessing the Test screen, you will be able to perform actuator operation verification by initiating a manual or automatic procedure depending on your needs



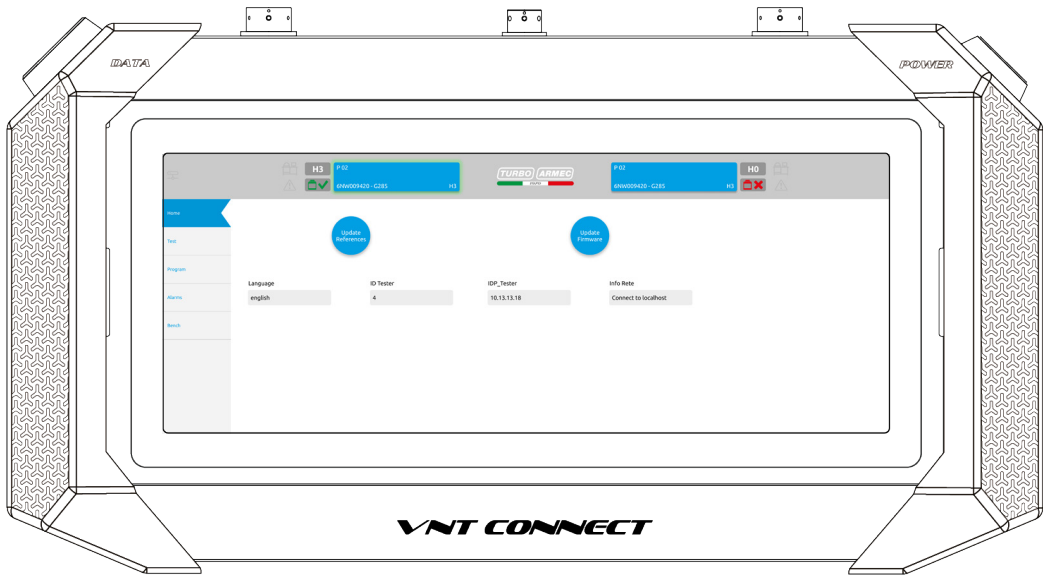
In the event that the selected actuator is of the programmable type, you will be able to access the Program screen through which you will have the option of rewriting its functional parameters and/or completely programming the circuit board.



The Bank screen provides detailed information on the status of any connection with ARMEC TURBO banks, detailing the exchange of software and hardware information between the parties.



To access the settings screen, you will need to click on the TURBO ARMEC logo at the top. On this screen you will be able to change the language in use and request start of the reference and software firmware update procedure.

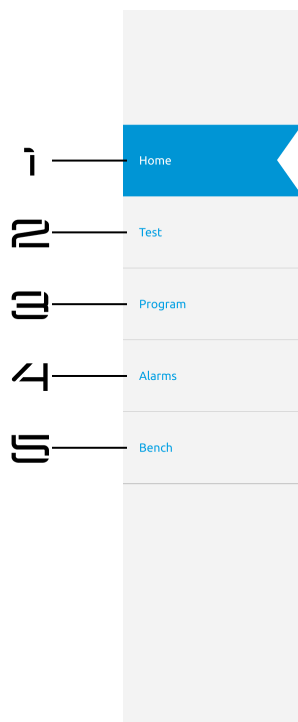


Home

After selecting the actuator test, the tester will display a list of the various supported actuator manufacturers.



1	REMOTE ASSISTANCE CONNECTION AVAILABILITY	5	CHECK COMPATIBILITY OF INSERTED CONNECTOR
2	CONNECTION ESTABLISHED ARMEC TURBO BANK	6	CODE SELECTED
3	ALARM ACTIVE	7	CHECK COMPATIBILITY OF INSERTED CONNECTOR
4	CONNECTOR TO USE	8	ARMEC TURBO BANK CONNECTION AVAILABILITY



1	HOME PAGE: Ability to search for the actuator or turbo code you need
2	TEST: Ability to perform actuator operation verification
3	PROGRAM: Ability to perform full or parameterized programming of the actuator
4	ALARMS: Ability to view active alarms and reset
5	BANK: Ability to consult changed parameters between VNT Connect and Banco TURBO ARMEC

Home

Home

Test

Program

Alarm

Bench

☐ Show all

Turbo

Actuator

Code Turbo	Manufacturer	A1	A2	A3	A4
53269700005	KKK	LP: NC	DP NC	DP NC	59001107126
49135-05671	MITSUBISHI	LP: NC	DP NC	DP NC	59001107126
727463-6	GARRETT	49135-056xx	DP NC	NC	NC
727463-6	GARRETT	6NW008412 - G54	NC	NC	NC
54409700009 S2	KKK	6NW008412 - G206	NC	NC	NC

Total References: 220

<< < 1 2 3 4 5 > >>

Home

Test

Program

Alarm

Bench

☐ Show all

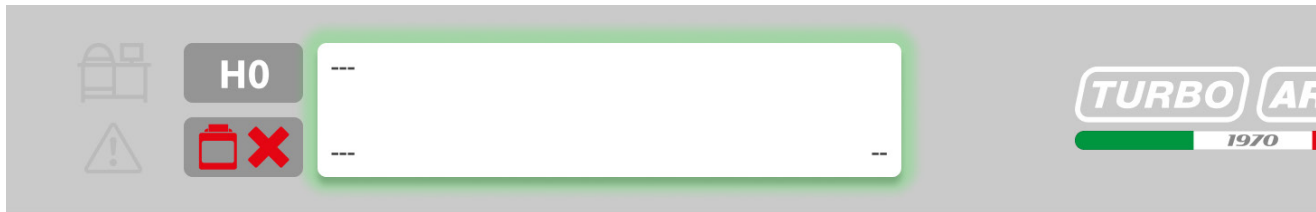
Turbo

Actuator

Actuator Code	Manufacturer	Connector	Actions
53269700005	KKK	H3	Use
49135-05671	MITSUBISHI	H3	Use
727463-6	GARRETT	H3	Use
727463-6	GARRETT	H3	Use
54409700009 S2	KKK	H3	Use

Total References: 220

<< < 1 2 3 4 5 > >>



:h

After performing the procedures outlined on page 17 and selecting the port to operate on, a choice confirmed by the presence of a green-colored outline on window 6.

In order to perform actuator verification you will need to enter the Home Page. You will be able to search for the desired code through two modes, taking care to have enabled the “**Show All**” toggle in case the connector is not already entered:

- **Search by Actuator Code;**
- **Search by Turbo Code;**

The search can be freely performed using any of the data from the search table (e.g. Manufacturer, Code etc..).

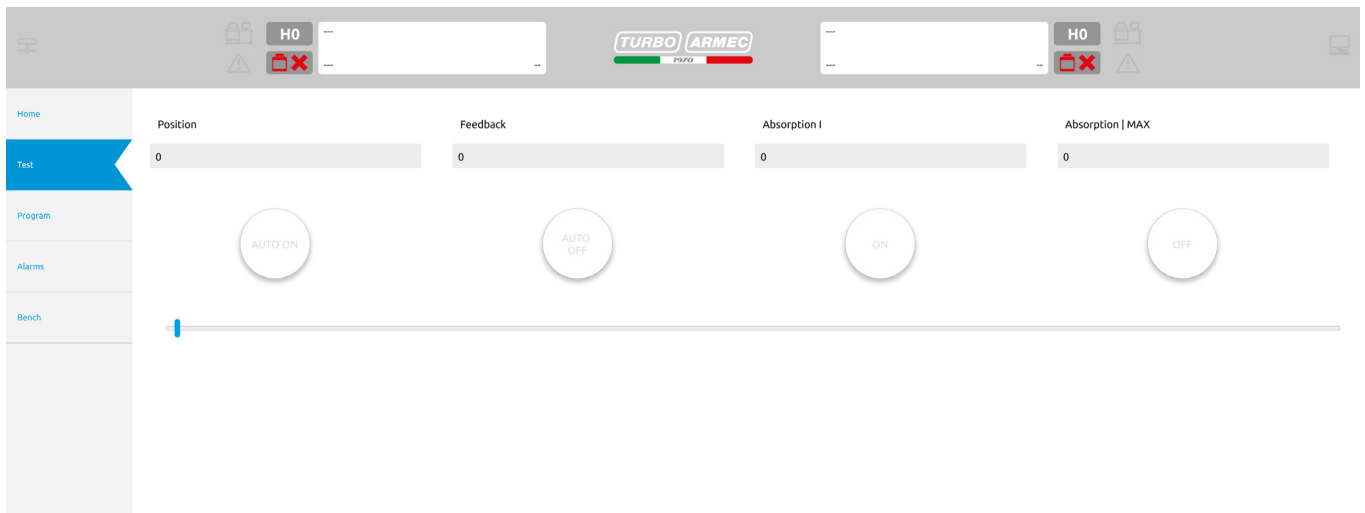
Once the reference to be used has been identified, it can be made available for testing using:

- In the case of searching by **Actuator Code**: Button Use
- In the case of searching by **Turbo Code**: Button with Corresponding Actuator Code

The loading of the same will be validated by the presence in window C of the actuator code and connector to be used in window 4.

Next, to perform the function test, it will be necessary to take the indicated connector and connect it to one of the two control cables. The same will have to be connected to the actuator under test.

Electronic Actuator Test



Select test to start the testing procedure. It will be possible to perform the test in two modes:

- **Automatic:** In this mode, the actuator will move from the minimum position equal to value 5 to the maximum position at value 95;
- **Manual:** In this mode to control the positioning of the actuator you will have to use the control bar, which will allow positioning at the desired point.

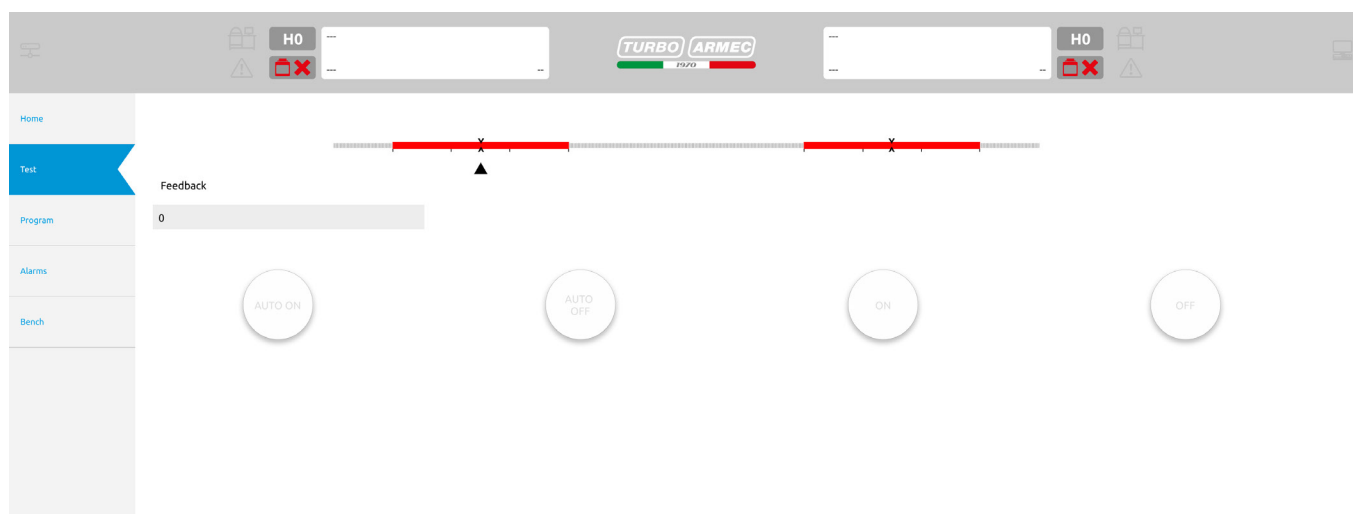
In this regard, either case, you will need to select the corresponding button and press the ON button to start the test.

The parameters displayed during the test will be:

- **Position:** Indicates the operating point where the actuator is positioned;
- **Feedback:** Indicates the feedback returned by the actuator to the VNT Connect;
- **Absorption:** Indicates the instantaneous value of current drawn by the actuator (in amperes).
- **MAX Absorption:** Indicates the maximum value of current drawn by the actuator during the whole cycle (in Amps).

In order for the test to be passed, the actuator must move from the minimum position to the maximum position returning feedback that is found to be aligned, i.e., around ± 2 , and no alarms are generated that would cause the test to be interrupted due to high current draw spikes.

ElectroPneumatic Actuator Test



Select test to start the testing procedure. Through this test it will be possible to check the output output from the electronic sensor positioned by the actuator.

For verification of the same, it will be necessary to press the **ON** button to start the test.

The parameters displayed during the test will be:

- **Feedback:** Indicates the feedback returned by the actuator to the VNT Connect;
- **Feedback Bar:** Through the moving cursor and tolerance zones, it indicates the correct positioning of the electropneumatic actuator on the turbocharger

For the test to be passed, the cursor inside the feedback bar will have to move along the full amplitude. This figure will indicate the correct electrical operation of the sensor.

The test should also be performed with the electro-pneumatic actuator assembled on the turbocharger, in order to verify and/or adjust it to the tolerance points indicated by the feedback bar.

The TURBO ARMEC VM4 / VM6 tester is recommended for creating the pressure/depression useful for moving the pneumatic part of the actuator.

Programming

Only for supported electronic actuators will the "Program" feature be available.
Currently the supported brands are:

HELLA;
SIEMENS;
MANDO;
KAMTEC;

As far as **HELLA** actuators are concerned, they should be distinguished between **Programmable** and **NonProgrammable**.

HELLA Programmable Actuators, are managed by the H3 connector and have the following codes:

712120
730314
781751
763797

Menu Functionality Programming

Reading HELLA Actuators

Select test to start the testing procedure. It will be possible to perform the test in two modes:

- **Automatic:** In this mode, the actuator will move from the minimum position equal to value 5 to the maximum position at value 95;
- **Manual:** In this mode to control the positioning of the actuator you will have to use the control bar, which will allow positioning at the desired point.

Select program to perform parameter reading of **HELLA** actuators

To take a reading of actuator parameters, after connecting the actuator to the appropriate connector, you will need to perform the procedures described in the HOME section. Having done the same correctly, the following information will be available:

- **Description:** Default description indicating the name of the firmware in case of saving;
- **Firmware version:** Version of the firmware preloaded inside the circuit board;
- **G-Code:** Gearbox number of the actuator;
- **Start:** Starting value of actuator lever movement;
- **Stop:** Arrival value of actuator lever movement;
- **Code:** Code of the electronic board;

It will be possible to change some of the information read, in particular, the value of **START** and **STOP** can be varied through the use of the two buttons (+) and (-) that will be enabled only after the reading is done.

Once the change of values has been made, it will be possible to carry out programming through the use of the **PROGRAM** button.

Learning and Saving Parameters of HELLA Actuators

In order to perform learning and subsequent saving of the parameters within the database, after performing the actuator reading described in the previous section, you will need to press the **NEW** button. In case you want to assign a name describing the contents of the save, it can be edited the Description field and then proceed to save using the **NEW** button.

In case you want to make changes to the above field after saving the reference, it will be possible through changing the content of the **Description** field and then using the **MODIFY** button.

If, on the other hand, the goal is to delete the generated reference, the **DELETE** button can be used.

Complete Writing of All HELLA Actuator Parameters

Description	Code	G-Code	Start	Stop	Actions
762965-1	71212	206	32.3	89.0	Use

In order to completely overwrite all the data in the actuator, you will need to select the “Firmware” section in the upper right-hand corner, which will appear as shown in the image above.

The firmware corresponding to the original values for the loaded actuator will be highlighted by a green background color and will also always be placed as the first line.

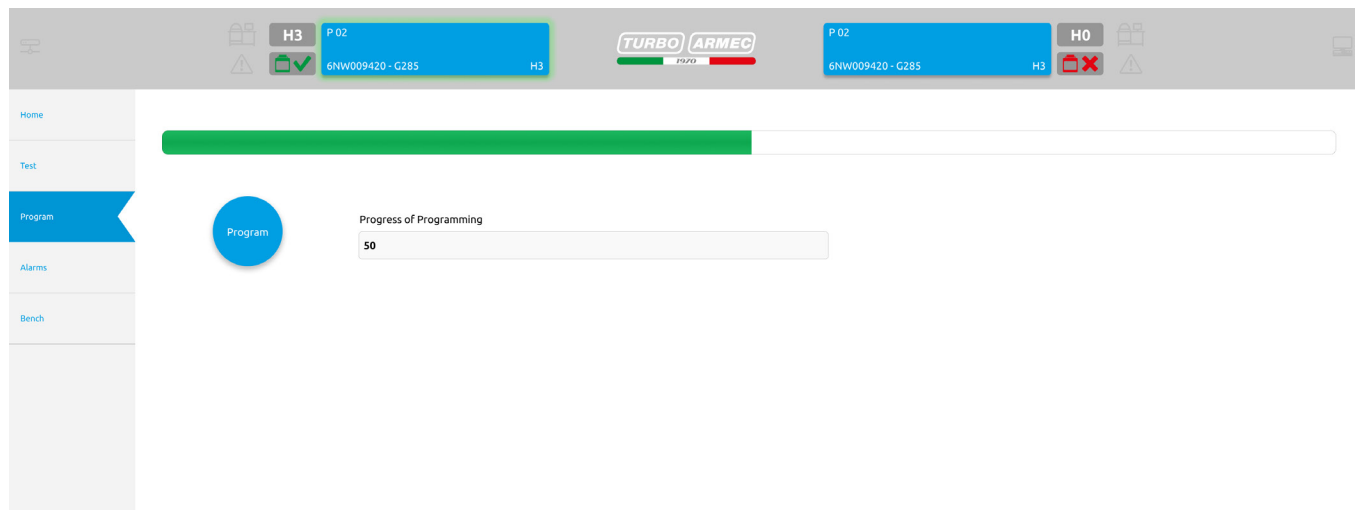
Pressing the Use button will make the selection of the parameters contained in the firmware, which will be loaded within the relevant fields on the Program page.

Now simply select the program section in the upper right-hand corner again, where you can view all the parameters contained within the original reference and press the **Program** button to conclude the programming procedure.

Programming Menu Features

Reading SIEMENS, MANDO and KAMTEC Actuators

To carry out movement range programming for Siemens, Mando and Kamtec actuators you will need to carry out the procedures described in the HOME section.



In order to carry out a correct procedure, it will be necessary to make sure that the Variable Geometry is mechanically connected to the actuator and that the actuator is securely attached to the turbine.

In order to proceed with Programming, simply press the Program button. The bar contained within this window will indicate the progress status through a number varying between 0 and 100. The procedure will be correctly executed when the indicator has reached the value 100.